Occidental Medical Times

VOLUME XIV. SAN FRANCISCO, JUNE, 1900. NUMBER 6.

ORIGINAL COMMUNICATIONS.

THE TREATMENT OF BRONCHO-PNEUMONIA.

By WILLIAM FITCH CHENEY, M. D., Professor of Principles and Practice of Medicine, Cooper Medical College and Physician to Lane Hospital.

Read before the Medical Society of the State of California, April, 1900.

Regarding the treatment of broncho-pneumonia, Osler says: "The frequency and the seriousness of broncho-pneumonia render it a disease which taxes to the utmost the resources of the practitioner. There is no acute pulmonary affection over which he at times so greatly despairs. On the other hand, there is not one in which he will be more gratified in saving cases which have seemed past all succor." How true these statements are we all know well; for broncho-pneumonia is always with us and we all have had to fight it. How can we best subdue it? What can we do to save the life of the victim it attacks? Our weapons in the contest, what are they? These are the questions I have thought it profitable to propose for discussion at this time.

By broncho-pneumonia I mean that disease which the older books called capillary bronchitis and which more recent authorities have named catarrhal pneumonia and lobular pneumonia. It is a sneaking, cowardly disease, for it attacks by preference the weak and the debilitated—the infant, whose life is just beginning, and the aged whose life is drawing to its close. It chooses, too, the infant that is already under average, suffering from malnutrition, chronic diarrhea, rickets, or some of the acute infections like measles, whooping cough or diphtheria; or the old person already afflicted with some chronic process exhausting his vitality, like interstitial nephritis, diabetes or carcinoma. At whatever time of life it comes, lowered resisting power prepares its way and constitutes its most formidable ally. This point, at the outset, challenges both our attention and our sympathy.

Broncho-pneumonia is a disease due to infection, but not by any special germ. The micro-organisms at work are different in different cases, and several different forms are commonly present in the same case. In other words, mixed infection is the rule in broncho-pneumonia. Furthermore, the infection attacks the bronchial mucous membrane primarily, and extends to the air-sacs only secondarily. The disease is thus a capillary bronchitis by its origin, and a pneumonia only by its development and its effects. Again, while the exudate formed on the bronchial mucous membrane does not contain enough fibrin to make it coagulable, as in lobar pneumonia, it yet contains enough to make it extremely sticky, so that it tends to block the finer tubes. The consequence of this blocking is the collapse of air sacs, because they can no longer be inflated; and this collapse of pulmonary tissue is frequently progressive and wide-spread. The important characteristics of broncho-pneumonia, that make it so formidable an enemy, are therefore these: 1. The regularity with which depression of vitality precedes and accompanies the disease. 2. The presence of an abundance of micro-organisms on the bronchial mucous membrane, whose toxins are constantly being absorbed into the blood. 3. The formation in the tubes of a viscid secretion that causes extensive obstruction to the entrance of air.

The dangers to life that the disease presents depend directly on the conditions just enumerated. These dangers are first, mechanical, from obstruction; and second, toxic, from infection. Probably the greatest menace to life is that of diminished air space from occluded tubes and collapsed sacs in the lungs, leading to deficient oxidation of the blood and threatening death from asphyxiation. Another menace offered by this mechanical obstruction in the lungs is gradual dilatation of the right ventricle, that goes on little by little as the obstacle to the pulmonary circulation becomes greater and greater. Still, a third menace to life is that of toxemia. It is difficult to calculate just how far the toxins in the blood are responsible for the prostration that forms so prominent a feature of the disease. We cannot doubt, however, that they play an important part in the production of exhaustion. They act especially as depressants to the respiratory and cardiac centers, they irritate the kidney epithelium which attempts to eliminate them, and they cause debilitating sweats, by which the skin likewise attempts to throw them out of the circulation.

Whether we look at the disease from the standpoint of pulmonary obstruction or from that of toxemia, our first duty in treating broncho-pneumonia is stimulation of the patient. This must be the prime object constantly kept in view. The disease makes its onset because of the patient's weakness, it thrives on his depression and it spreads and grows in direct proportion to his exhaustion. The more stimulation we can furnish the patient, therefore, the more opposition we offer to the progress of the disease and the more we enable him to throw it off. Every therapeutic measure employed in this affection must first be weighed most carefully with regard to its effect on the patient's strength; everything that depresses will injure; everything that stimulates will benefit; and just here, it seems to me, lies the main secret of success in fighting broncho-pneumonia.

With "stimulation" our watchword, our first aim must be to see that nutritious food is given in sufficient quantity, for no drug is equal to food as a sustainer of life. The food must be nutritious—that is, capable of assimilation, and it must be given in definite amounts at regular intervals, so that the digestive organs will not be overtaxed. Milk is the best diet, peptonized if its digestion causes any inconvenience. I commonly order six ounces for an adult every two hours, so that at least two quarts will be taken in the 24 hours. There is no objection to animal broths, if the patient tires of milk; but milk gives a maximum of nutrition with a minimum of bulk and always deserves first choice. Next to careful feeding one should think of some form of alcoholic stimulant. In other diseases we wait for symptoms of depression to arise before we begin giving alcohol as a stimulant; but in broncho-pneumonia depression is the precedent condition that makes the disease possible. I believe, therefore, that whiskey should be given from the outset, and the only question at first is as to the amount advisable. I usually begin by ordering three ounces in the 24 hours—one-half ounce every four hours, increasing this amount as the condition indicates, and judging from time to time about the necessity for more by the pulse, the temperature and the degree of prostration.

Chief among stimulant drugs comes strychnine sulphate, which in broncho-pneumonia meets several indications. First it acts as a stimulant to the respiratory center, increasing the force and depth of inspirations, thus keeping the small tubes open and preventing collapse of air-sacs. Second, it acts as a stimulant to the reflex activity of the cord, exaggerates the impression sent to the cord by the secretion in the tubes, makes the cough in turn more forcible and efficient and so causes elimination or at least prevents accumulation of the viscid exudate. Third, it acts as a stimulant to the heart, increasing the force of the contraction of the right ventricle, and so helping it to overcome the obstacle in the way of its work. Strychnine, like alcohol, should be given from the outset of a case of broncho-pneumonia. The dose at first should be moderate, 1-30 grain every eight hours, gradually increased, if indicated, to once in six or once in four hours. In desperate cases the action of the drug is more certainly obtained by hypodermic injection, and the dose often has to be pushed to as high as 1-24 or even 1-20 grain every four hours. The only other drug indicated for routine administration in broncho-pneumonia is the carbonate of ammonium, but as a stimulant, not as an expectorant. It is undoubtedly a powerful stimulant to both respiration and circulation, though more fleeting and transitory in its effect than strychnine. Its action as an expectorant is entirely secondary and accidental, due to its elimination by the bronchial mucous membrane, and its promotion of secretion by its presence there. The dose of carbonate of ammonium commonly advisable is five grains every four hours, and it can be advantageously given in a mixture of syrup of tolu, mucilage of acacia and water.

These are the therapeutic measures to be thought of first in the treatment of broncho-pneumonia. But no plans can be made for its care that are not subject to modification from day to day or even from hour to hour. Every case should be watched with the same systematic attention to detail that is given to typhoid fever. It is very desirable to have, if possible, a trained observer at hand in the person of a professional nurse. The temperature must be taken at least three times a day, or better yet, every four hours. The number of respirations must likewise be frequently noted. The pulse must be watched most carefully as regards both its rate and its character. The color of the face, of the ears, of the lips and of the nails must be continually observed for the warning thus given of the interference with proper oxidation of the blood. The amount of nourishment taken in each 24 hours must be accurately recorded; likewise the amount of urine voided and the number of hours of sleep obtained. It is only by keeping the case thus well in hand that one can tell whether to modify a plan of treatment once adopted or to continue with what is being done.

Some symptoms that at times demand special treatment must now be mentioned. First on the list comes *cough.* This feature of broncho-pneumonia is a necessity of the case, and is not to be lightly interfered with. By means of cough the bronchial secretion is kept from accumulating or is removed; and to continually repress it or stop it is bad practice, apt to be followed by higher temperature, increased dyspnœa and cyanosis. While opium has no place in the routine treatment of broncho-pneumonia, and is rather to be avoided as a general rule, yet now and then cough becomes so constant as to interfere with rest, and more depression comes from allowing it to continue than from the administration of an opiate. To check cough, the least harmful opiate is Dover's powder. Five grains or even ten grains at a dose should be given, but not repeated until again demanded. Often such a dose once in eight hours, or at most once in six hours is required to preserve the proper balance between cough and repose; but the dose should not be repeated at all unless the necessity for rest demands it. I choose Dover's powder first as most desirable for the control of cough, but sometimes where it fails to quiet, one-half grain of codein will act like a charm. Third on the list and least desirable among opiates in broncho-pneumonia comes one-quarter grain of morphin hypodermically; but nevertheless it sometimes has to be resorted to at last in order to secure rest.

Pain is never as prominent a symptom of broncho-pneumonia as of lobar pneumonia. More often the complaint is of a sense of tightness and soreness rather than of acute pain. This sensation does not usually demand opium for its relief, but can be overcome by hot applications to the chest. And this leads me to speak of a therapeutic measure not so far mentioned, the flaxseed poultice. I did not include it in the routine treatment, because I do not believe in adults it is always indicated; but there are certain conditions that make its use advisable, and most prominent among these is the discomfort in the chest. Nothing gives so much relief to the pain or soreness of broncho-pneumonia as a hot flaxseed poultice, or even a poultice jacket, covered with oiled silk. I am aware that the flaxseed poultice is no longer the fashion and has been condemned by numerous high authorities; but I believe it still has its usefulness, especially for the relief of the symptom now under discussion.

The *fever* of broncho-pneumonia rarely becomes high enough to constitute a source of danger or to demand special antipyretic treatment. Certainly depressing drugs like phenacetin, antipyrin or acetanilid are distinctly contraindicated. High temperature usually means a wide area of infection and extensive absorption of toxins, and therefore calls for additional stimulants rather than for depressing drugs. Fever demands special treatment in broncho-pneumonia only when it causes unusual restlessness, irritability and disturbed sleep; and here a soothing effect can be obtained by sponging the extremities or the entire body with equal parts of cold water and alcohol.

Insomnia is a symptom that at times demands special attention. In a disease with protracted course, like broncho-pneumonia, where success depends so largely on maintaining the patient's vitality, we cannot afford to ignore so important a cause of depression as lack of sleep. If it is the cough that interferes with rest, Dover's powder or codein or morphin will be required to give repose; but more often it is simply the restlessness that comes from anxiety or from the irksomeness of the day's routine. In such case trional answers best as a hypnotic. Combined with codein its power seems to be enhanced and its effect prolonged—the right proportion being as a rule ¼ grain of codein with fifteen grains of trional, given in the early evening. Another device that answers well in many cases is a rectal suppository containing ten grains of asafoetida. And still a third remedy of long proven usefulness, if the others fail, is sodium bromide in dose of thirty or forty grains; I prefer to give this also by the rectum, dissolved in a little starch water, in order to spare the stomach.

Scanty secretion from the bronchial mucous membrane is a symptom that now and then calls for a modification of the original plan of treatment. The cough is excessive and troublesome, causes a great deal of soreness in the chest, but is accompanied by little or no expectoration to justify the paroxysms. Here again the hot flaxseed poultice or jacket is distinctly indicated for its relaxing effect. It is well also to substitute now for the carbonate of ammonium the chloride of ammonium, which is not so distinctly stimulating, but has more power to promote secretion from the bronchial mucous membrane. This action of the chloride of ammonium is increased by the addition of a small amount of the iodide of potassium to each dose. For instance, I prescribe 7½ grains of the ammonium chlorid and 2½ grains of the potassium iodid in a tablespoonful of a mixture of syrup of licorice, mucilage of acacia and water, every four hours, substituting this mixture for the carbonate of ammonium mixture originally planned. Finally, Dover's powder finds another indication for its use when secretion is scanty, not merely for the relief it gives to cough, but for the relaxing effect on the bronchial mucous membrane and the promotion of secretion that the ipecac in the powder affords.

Excessive secretion, on the other hand, occasionally constitutes a very serious menace to life. The amount of sticky, ropy mucous poured out into the tubes becomes so profuse that it cannot be removed rapidly enough to leave proper air space. In such a state of affairs the indications for treatment are two: 1. To check secretion; and, 2. to meanwhile increase the power of expulsion and to keep the heart and respiration going, by increased stimulation. 1. To check excessive secretion no drug is more reliable than atropin sulphate, given hypodermically. The dose should be 1-150 to 1-100 grain repeated once in six hours or even once in four, according to the effect produced. Furthermore, any ammonium salt that is being given must be stopped temporarily, for even the carbonate increases the bronchial secretion, though not to the same extent as the chlorid. 2. The stimulants already advised must now be pushed. The quantity of whiskey must be increased to six ounces or to twelve ounces in 24 hours. Strychnin is especially to be depended upon in this emergency, for no other drug gives the patient so much power to get rid of the secretion, and no other affords equal support to the circulation and respiration. Atropin, like strychnin, is a powerful stimulant to respiration, and thus becomes a doubly useful remedy here. The strychnin and atropin should be combined hypodermically, and the dose of the former must be increased to 1-25 or to 1-20 grain every six hours or every four hours according to the urgency of the symptoms. Finally, in a crisis, when the lungs seem about filled up with material that the cough is powerless to remove, an emetic will sometimes succeed in relieving the accumulation and so in saving the patient from apparently inevitable asphyxiation. Some form of ipecac is advisable for this purpose, because it is the least depressing of the emetics; of the wine an ounce should be given, or of the powder a small teaspoonful.

Cyanosis is a symptom that always calls for prompt and vigorous management. It means deficient oxidation of the blood and the accumulation in it of carbonic acid gas. Whether this be due to lack of air space in the lungs from obstruction, or to inefficient pulmonary circulation from dilated right ventricle, it demands stimulation for its relief. Here again whiskey should be freely administered. Strychnin and atropin in full dose must be given hypodermically; and digitalin, in dose of 1-50 grain, should be added to each injection if there is evidence of cardiac weakness. Another drug of great usefulness here as a stimulant to both heart and respiration is caffein in dose of five grains of the citrated caffein every six hours. I wish also to speak a good word for oxygen, which has unfortunately fallen somewhat into disrepute, because so often its exhibition is simply the last resort. If used early, when cyanosis first appears, it gives great relief to respiration and restores normal color to the skin more promptly than any other remedy. I order oxygen for a case as soon as the slightest evidence of cyanosis is seen, and have it administered continuously until normal color is restored. It is employed again as often as blueness of the surface is observed, and used in this way has repeatedly proved a valuable aid in the fight.

Diminution of urine is a symptom that in old people especially should be looked upon as of grave import. If the amount of urine voided during each 24 hours is regularly recorded, any decided decrease from the normal at once becomes apparent. Too often it means that an old granular kidney is proving inadequate to the extra work thrown upon it by the acute infection. Particularly if urinary examination shows the presence of albumen and granular casts, the probability is strong that a uremic condition will develop to complicate and too often to terminate the case. The best drug to avert this disaster and to whip up the amount of renal secretion is nitroglycerin. It acts best when given hypodermically in dose of 1-100 grain every four hours. Infusion of digitalis should at the same time be given by mouth and hot poultices should be applied across the loins.

The treatment of broncho-pneumonia in infants deserves especial consideration. It is here that the disease finds its richest harvest, for the mortality, according to Holt, runs as high as 30 per cent. Assume the case of an infant six months old, bottle-fed, under-weight, badly nourished and anemic—such a one as commonly falls a prey to broncho-pneumonia;—what can be done for such a frail bit of humanity? The first necessity is that a nutritious food be given in definite amount at regular intervals. Whatever preparation the baby has been taking previous to this illness had better be continued, unless it be manifestly improper and unfit. If a new food must be selected, it had better be one of the milk and cream formulæ, with low proteid percentage and peptonized. Careful feeding of an infant with broncho-pneumonia is to my mind the prime essential, and disturbance of digestion is the complication most to be feared. Beside the regular food nothing else should be allowed except water that has been boiled, given either plain or with the white of an egg stirred in it. It is a mistake to add stimulants or medicines to the infant's food—they should always be given separately. Excessive handling of a sick infant is depressing to it and should be avoided, but frequent change of position is necessary. The baby should be kept in a well ventilated room, not too warm. Abundance of oxygen is an essential and heat is always debilitating. Nothing is more exasperating than to find an infant with broncho-pneumonia shut up in a small room with all doors and windows closed for fear of draught, the thermometer 80 or above and three or four women hovering about the child, exhausting its oxygen and breathing their carbonic acid in its face.

I believe in the routine use of the poultice jacket for infants with broncho-pneumonia. My main reason is that they do better with it than without it, regardless of all theories to the contrary. I advise that with the flaxseed meal a little mustard be mixed in making the poultice, usually in the now classical proportion of 16 to 1. I advise further that twice in the day, when the poultice is changed, the chest shall be thoroughly rubbed with warm camphorated oil. Stimulants are advisable as a routine measure, even from the onset. Brandy seems to agree with the infant's stomach better than whiskey does, and is usually to be preferred. I order it at first in dose of twenty drops every four hours for the infant six months old—two drachms, therefore, in the twenty-four hours. This is often increased later to a half ounce or an ounce in 24 hours. It should always be given well diluted, the twenty drops in at least two teaspoonfuls of water. Among drugs I have but two for routine use, and both are stimulants,—chlorid of ammonium and strychnin. I select the chlorid in preference to the carbonate simply because experience has proven that it is less apt to disturb the stomach of the infant. At six months the proper dose is one-half grain, given every four hours, in syrup of tolu, mucilage of acacia and water. The strychnin I give in plain watery solution; at six months the proper dose is 1-400 grain every six or every four hours. This dose is easily obtained by dissolving a 1-25 grain hypodermic tablet in two ounces of distilled water and giving one teaspoonful of the solution.

The infant must be watched even more closely than the adult for evidence of change in its condition. It must be remembered that with even an average case of broncho-pneumonia at six months the respirations will be about 80 to the minute and the pulse 140 to 160. The temperature is a valuable index to the progress of the disease and must be taken frequently; always by rectum, for in infants no other method is reliable. Increased rapidity of pulse and respiration call for increased amount of brandy and strychnin. Atropin can often be added with advantage, as a respiratory stimulant; at six months the dose is 1-1200 grain, which can be easily obtained by adding a 1-150 grain hypodermic tablet to an ounce of distilled water and giving a teaspoonful of the solution. Fever is rarely high enough to demand antipyretic treatment, and the depressing coal tar drugs should be carefully avoided. If symptoms of nervous disturbance arise from fever, as they are especially apt to do in infants, cold sponging, or even the bath gradually cooled from 100 to 80 are far more efficacious and less dangerous than antipyretic drugs. Restlessness from cough demands Dover's powder; the dose at six months being one-half grain, never repeated except as required to secure rest. Opium is especially depressing to infants with broncho-pneumonia and should always be guardedly administered. For attacks of cyanosis and collapse from respiratory failure, the best treatment is the hot mustard bath, made in the proportion of one tablespoonful of mustard to one gallon of water at a temperature of 100. In this the infant should be immersed for ten minutes to half an hour. It should then be removed and dried and oxygen administered by inhalation, strychnin and atropin hypodermically, and friction and even flagellation should be employed as external stimulants to respiration and circulation.

I am aware that the foregoing enumeration of our therapeutic resorts contains nothing new, but these have all been tried and are recommended from personal experience. In no other disease are greater demands made upon our resources than in this, and I have thought that this review of the ones at our disposal would be profitable to us all. In every case we must fight continually and never despair;

for to us it is given to command the forces in the battle against disease, and if we lose courage, who then shall hope?

SUGGESTIONS REGARDING THE MANAGEMENT OF CASES OF INTRA-PERITONEAL SURGERY.

By **Clinton Cushing, M. D.**, San Francisco.

Read before the Medical Society of the State of California, April, 1900.

Those who were educated in medicine thirty years ago little dreamed then of the wonderful progress in abdominal surgery that has taken place in the past quarter of a century, and in spite of a somewhat extended observation and experience I am still amazed at the recovery of apparently desperate cases where a great violence has been done and where according to former rules, death would have been inevitable. As all are aware under proper management we now explore the peritoneal cavity with very little risk. Ignorance and carelessness would be as fatal to the patient now as it was thirty years ago. Success in intra-peritoneal surgery depends largely upon taking advantage of all the ways and means that modern science and observation had collated in this department of surgery, and from the four corners of the earth come the details and records and experiences of a multitude of workers in this department of the healing art. In many cases the exact diagnosis is so difficult and uncertain that the condition of affairs in the peritoneal cavity is in truth an undiscovered country, until it is explored by the surgeon, and while it is true that the risk of operative proceedings has been greatly lessened in later years, it is still great enough to warrant the most careful and painstaking effort in working out the numberless problems that crop up during a difficult intra-peritoneal operation. Complications and accidents that by no possibility could be foreseen, and for the management of which is required coolness, and courage, and endurance, and good temper, and quick decision as to the best plan to pursue. It is perhaps needless to say that good judgment is based largely on experience, but a thoughtful consideration of the work and writings of successful men should certainly be a help to the operator in the meeting of emergencies.

In the preparation of this paper it is deemed best to set down results of personal observation and experience, rather than the opinion of others, for the literature of the subject is of great extent and easily accessible to those who desire to make a study of the subject. There is a maked difference of opinion between surgeons on various points, but the principals of surgery that are commonly accepted apply as a rule to intra-peritoneal surgery. Except in an emergency, it is better to give at least three days to the preparation of the patient, and I doubt not this preparation properly carried out adds materially to the safety of the case, the ease of the convalescence, and what is of most consequence, lessens the worry and anxiety of the surgeon in charge. The alimentary canal should be thoroughly cleared out by a mercurial purge, and I find the most efficient to be 10 grains of blue mass, at bedtime every night, for three nights, following the next morning by a Sedlitz powder, every hour if needed until a free movement is obtained. But if a fairly good movement occurs from the action of the pill no other laxative is required, for it is a decided advantage if some part of the mercury remains in the canal. One of the strongest reasons for the use of the mercury is that not only the presence of the remedy itself acting as an antiseptic to the canal, but the free flow of bile consequent upon its use not only tend to clear out the various pockets of the large intestine but adds materially in causing such a condition of the intestine and its contents as to prevent fermentation, and the formation of tympanitis, that most troublesome condition which so frequently follows intra-peritoneal work. The condition of the lungs, the kidneys and the heart should be carefully investigated. The examination of the secretion of the kidneys should be exhaustive and the question of the structural disease of these organs should be differentiated. The reason for this is that we may refuse to operate upon cases presenting advanced renal lesions, or that we may delay the operation until the kidneys are put in the best possible condition by careful preparatory treatment, and that the friends of the patient may know, in any case where the operation is imperative, that the existing disease of the kidneys adds greatly to the danger of the procedure. The state of the air passages and of the lungs themselves should be carefully investigated, for if bronchitis exists it would make a difference in the choice of the anesthetic used. I do not think that the existence of a moderate amount of tubercular disease or even a moderate sized cavity in the lung would seriously interfere with the successful use of the anesthetic. Mitral or aortic insufficiency is not necessarily a bar to the use of an anesthetic, but if such a state exists it should be recognized and special care taken in its use. I have not found that an irregular action of the heart due to neurotic causes could be an objection to the use of ether or chloroform but on the contrary the use of ether seems to stimulate the heart up to such a condition that the irregularity ceases. It is a remarkable fact that a considerable number of women subjected to operation are affected mentally either as a coincidence or as a result of the procedure. In other words a certain percentage become insane, and it is well in dealing with a stranger to ascertain something about the previous histiry of the patient's mind, and nervous system and whether she has suffered at any previous time from insanity or epilepsy. During the three days of preparation for the operation the patient should be permitted nothing but liquid food. One of the best varieties are equal parts of well boiled oatmeal gruel and milk. This to be salted to suit the taste. This is very nourishing, is not in the least irritating, and can be given ad libitum. Strong broths from chicken, mutton or beef in which rice has been boiled, tea, coffee and cocoa, and as much water as the patient will drink. Indeed the more water the patient drinks the better, as it flushes out the kidneys and is likely to lessen somewhat the excessive thirst so common after intra-peritoneal operations. On the morning of the operation the lower bowels should be very carefully washed out with a large injection of warm salt water. The advantage to the patient of having the intestinal tract cleared out is very great and is as desirable that there be as little fermentative matter as possible in the canal. The patient should have a warm bath for three successive nights, with a very free use of soap over the whole body. If the patient is in good general health he need not necessarily be confined to the house or hospital during the three days of preparation. The night before the operation the site of the proposed incision should be covered with a compress wrung out of 1:1000 of corrosive sublimate, in equal parts of alcohol and water, securely bandaged in place and allowed to remain until the patient is taken to the operating room.

I would here suggest that the health of the surgeon, in order to have the best results to the patient, should be as nearly as possible perfect. He should not go into the operating room tired and exhausted or with any of his senses blunted, but in such a condition that his muscular nervous system be enabled to withstand the continuous strain of a prolonged operation, and that his judgment may remain good. Nurses, assistants and visitors should keep perfectly quiet while in the operating room. It is bad taste and bad manners to laugh and to talk and to tell stories during the conduct of an operation and does positive harm by distracting the attention of the assistant and the operator from the business in hand, and is in some sense an insult both to the occasion and to the surgeon who has the responsibility of the case. No one should be permitted in the operating room, who is suffering from influenza or any form of fever or who has been recently attending a case of contagious disease, or dissecting, or making a post mortem examination. No woman should be in the operating room or assist at the operation if she is menstruating. The surgeon and those assisting him in the operation should not wear the clothing worn in the street, which as all are aware is saturated with the filth and dirt that the wind carries everywhere in our dusty streets, and should wear long cotton frocks covering their under clothing. Visitors should leave their coats and vests in an outer room and also put on the long cotton garment, and they should be particularly careful to touch nothing with their hands in the operating room unless expressly asked to do so by the surgeon in charge. The surgeon and his assistants should wear white cotton caps to prevent the dandruff or perspiration from falling off and contaminating the site of the operation. All the instruments should be boiled and all the gowns and towels and dressings should be sterilized. The silk ligatures should be boiled and the catgut ligatures should be heated to 300 degrees for a half hour. The hands of all engaged in the operation should be scrubbed for ten minutes with an abundance of soft soap and hot water. This is the most important part,—the preparation of the hands. The nails being trimmed short and carefully cleaned, the hands are now placed in a solution of permanganate of potash, a tablespoonful to a half basin of hot water until the hands are about the color of mahogany. They are then transferred to a saturated solution of oxalic acid in hot water until they are bleached perfectly white. The hands are then scrubbed with a nail brush in a solution of corrosive sublimate one to the thousand and afterwards rinsed in pure alcohol.

And now comes the question of the choice of anesthetics. My preference particularly in prolonged operations is very much in favor of sulphuric ether, but would give chloroform to a young child, to one suffering from disease of the kidneys or laboring under bronchitis. Ether is a stimulant, chloroform is a sedative. The last portions of the patient's body to lose sensibility are the tissues about the anus and the perineum, and it has been found that when a patient is etherized to a degree that these parts become insensible to the prick of a needle the patient still remains in good condition, where as with the use of chloroform by the time the patient has arrived at the same comparative state of insensibility, she is close to the danger line. Within the past ten years I have twice nearly lost patients from the use of chloroform, but with the exception of occasionally having troublesome vomiting or a slight cough I have seen no untoward effect from the use of ether. I have had no experience in the use of any other form of anesthetic.

The patient being etherized the antiseptic pad is removed, the legs and feet are well covered with blankets, and the skin at the site of the operation is again scrubbed with soap and water, and washed with alcohol. The smaller the incision on general principles the better results. Nevertheless the size of the incision must depend largely upon the character of the work to be done and the difficulties encountered. And so also the sooner the operation is finished and the abdomen closed the less risk to the patient. But it should be remembered that a prolonged operation carefully done is safer than a short operation carelessly done, and it goes without saying that the more serious the operation and the graver the conditions found the longer the incision and the more prolonged the operation. The less the amount of blood lost and the less the contents of the abdomen are handled the less shock and the less danger. Therefore from the beginning, all bleeding points should be seized with hemostatic forceps and the omentum and the intestines should as far as possible be kept within the abdominal cavity, if consistent with the work to be done. And it is better to delay the progress of the operation and ligate vessels or put on pinch forceps than to go on in the face of any considerable hemorrhage. The adhesions of a few weeks or even of a few months standing can usually be broken up with the fingers without difficulty, but old adhesions of years standing, are sometimes like cartilage and require the greatest possible care in their separation and dissection, involving great danger to the various organs, in the abdominal cavity, particularly the intestines and the bladder. Should however such injuries occur, and they are not uncommon, the rent should be closed by two rows of continued sutures of fine catgut. If the ureter, where it passes into the pelvis, becomes cut or drawn it should be dissected and planted into the site of the bladder. It is not an infrequent thing in the removal of diseased fallopian tubes to have the ligature at the pelvic end of the tube slip to such a degree as to cause hemorrhage and as a matter of safety if there is any possible doubt as to the condition of the stump, to put a supplementary ligature one-fourth of an inch farther out on the ovarian artery, in order to guarantee against possible hemorrhage. Where the operation does not involve the presence of pus, I prefer silk ligatures to any others. Where one has to deal with an infected surface or an abscess, sterilized catgut is better, as being less likely to become the center or focus of infection. But the silk has the advantage of remaining tied more securely than the catgut and if not infected it soon becomes encysted and absorbed. The question of drainage is and has been for some years a burning one. The absorbing powers of the peritoneum is undoubted. So long as no inflammation of this membrane occurs its powers to dispose of effused blood or effusions of serum or lymph is wonderful, but where the cavity of the peritoneum becomes infected with noxious material, and especially in the presence of blood clots, the usual drainage has given in my hands the best results. It is doubtless true that infection may in some cases be further introduced through the drainage tube. It is also true that the danger of hernia is also increased; it is also true that in septic cases of pelvic abscess the pus collections anywhere about the cavity of the peritoneum are likely to end fatally unless some provision is made for an outlet from the diseased surface. In breaking moderately formed adhesions in the pelvis or elsewhere frequently a large oozing surface is left behind. And now if the patient is suffering greatly from shock and the bleeding is not wholly controlled by hot compresses to the part it becomes absolutely necessary to close the abdomen and get the patient into bed as soon as possible. In such an event the introduction of a drainage tube through the abdominal opening down to the site of the oozing, permits the coagulation of the blood, closing of the abdomen, and the returning of the patient to bed in the shortest possible time. These two classes of cases, infection and hemorrhage, are the only ones in which I have used drainage for years. For the purpose of drainage I find that the rubber or glass tubing answers every purpose. The gauze drain is more difficult to manage and is not so perfect as the tubes of glass and rubber. In non-septic cases the peritoneum should be closed by a running catgut suture. The fibrous structure of the abdominal wall should be closed by interrupted and chromisized catgut suture, and the skin and the subcutaneous fatty tissue should be closed by a deep whip-stitch running suture of catgut. In septic cases all the layers of the abdominal wall should be brought together by through and through suture of silk worm gut. The advantages of a through and through suture of silk worm gut permits the removal of one or more sutures as may be needed in any event, for purpose of drainage or investigation, without disturbing the balance of the wound. For dressing the abdominal wound I find Keith's dressing most satisfactory, one part carbolic acid to 10 of glycerine. A double fold of gauze is soaked with this and laid over the wound and the usual compress and bandage applied. The drainage tube if used for hemorrhage is usually removed in 36 or 48 hours. If for infection it should be removed when the discharge becomes scanty. The Trendelenburg position is a great advantage in operations about the pelvic cavity but where the surface operated upon is septic the very serious objection exists that the secretions and fluids gravitate to the upper part of the abdominal cavity and so affect the whole upper part of the peritoneum, and my septic cases have never done as well when the Trendelenburg position has been used. Shock is best relieved by the subcutaneous injection of 1/3 of a grain of strychnia, repeated in half hour, if necessary, and the introduction into the connective tissue beneath the breast and behind the scapula of one quart or even two quarts of normal salt solutions, a rectal injection of hot water and whiskey. After the patient is put to bed preferably on her side, the less that is done for her the better except the rectal injections of one ounce whiskey and one pint tepid water, repeated every four hours continuously. The patient gets absolutely nothing by the mouth unless she suffers greatly from thirst when she gets a teaspoonful of water once an hour, hot or cold which ever she may desire. If the pain is only moderate as is usually the case no opiates are permitted. If the patient's suffering seems great, the first and perhaps the second injection of the rectum should contain 40 drops of McMunn's elixir of opium and the patient is told that if she will bear her pain with equanimity, unless it be unbearable, that it will soon become better, and that the following day the vomiting and the discomfort will be very greatly relieved. Morphine is never given in any way. Morphine in my hands has almost always proven unsatisfactory in patient's following an abdominal operation, it constipates the bowels and tends to keep up the vomiting, prevents peristalsis and weakens the morale of the patient. I quite agree with Lawson Tate that following an abdominal inception that morphia should only be given to relieve the pain of a dying woman. If the abdomen is distended at the end of 24 hours it is important that immediate action be taken to relieve the distension, and one of the best means to accomplish this end is to give the patient one grain of calomel every hour for eight hours, and to give high rectal enema of one pint of senna tea, in which has been dissolved one teacupful of epsom salts and one teacupful of black molasses. This stimulates the peristalsis greatly and should be repeated if need be, unless there is an escape of gas at the end of 24 hours. For the vomiting I know of no specific. The above plan gives better results than any other. Keep the stomach empty and stimulate the peristalsis of the bowel in order that the bile and secretions pass downwards instead of upwards. A strong cotton cloth securely pinned while the patient is in a recumbent position makes the most satisfactory abdominal bandage.

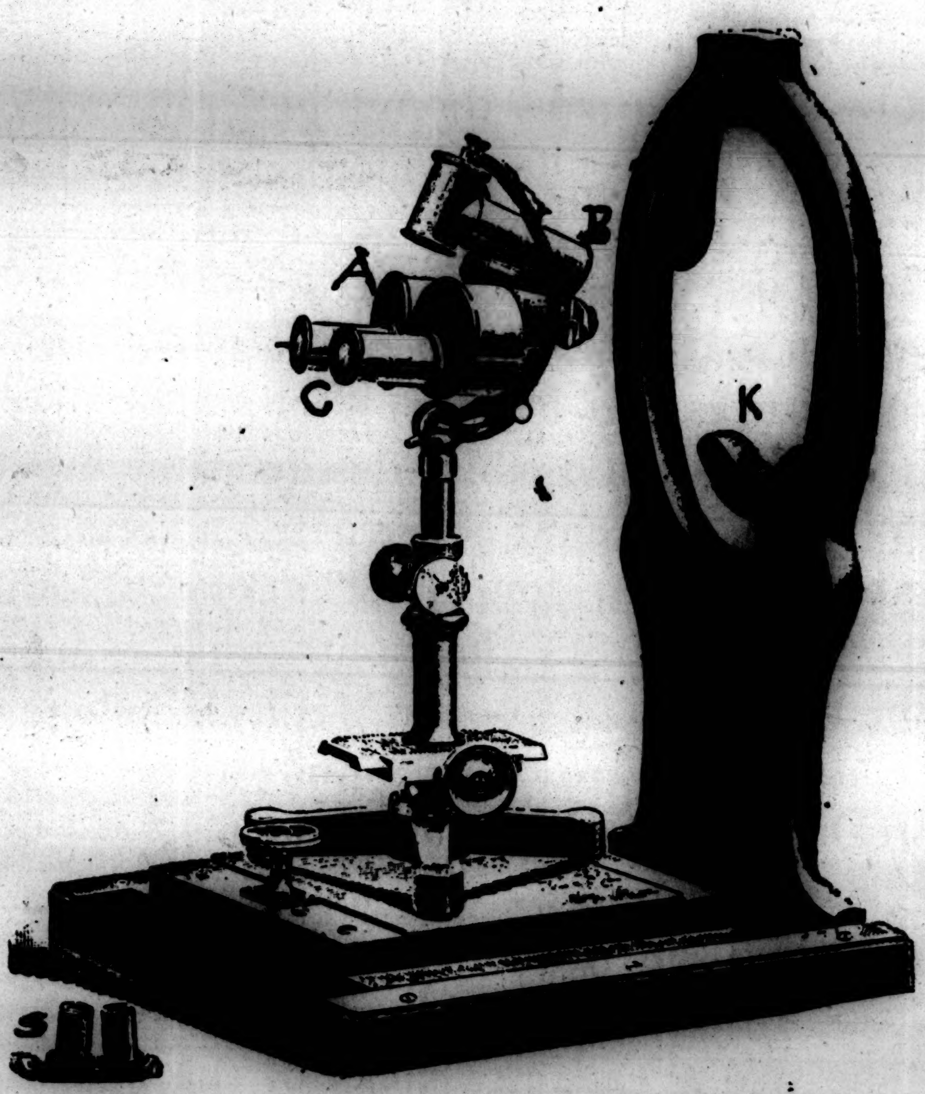
696 Sutter St.

MODERN METHODS OF RECOGNIZING THE PRESENCE OF FOREIGN BODIES IN AND AROUND THE EYE WITH DEMONSTRATION OF APPARATUS AND SPECIMENS.

By A. Barkan, M. D., San Francisco, Professor of Diseases of Eye, Ear, Nose and Throat, Cooper Medical College.

Read before the Medical Society of the State of California, April, 1900.

Up to a few years ago oculists did satisfactory work in searching for foreign bodies within the eye with the well tried methods of lateral and focal illumination, in itself or in combination with either Nachet's, Hartnack's or Brucke's Loupe as magnifying glasses. The ophthalmoscope concave or plane—alone or in combination with a strong convex lens of 15-20 diopters fastened behind its central opening, the observer closely approaching the eye to be examined, as in the direct method—has yielded good results. Of course, a thorough clinical examination of the injured eye, the nature of the injury, the condition of the wound, the wound channel leading into the depth of the eye, the examination of vision and of the field of vision, tension and painfulness to touch with finger or probe, have been, and still are of greatest importance in determining the presence and course of a foreign body, and will in themselves suffice in the great majority of cases to help us to a correct diagnosis. But whether using the ophthalmoscope, focal illumination or magnifying loupes, we always only used—though generally with very good results—cyclopic, monocular vision; so that the want of employing both our eyes for stereoscopic plastic vision and observation of diseased or injured eyes, has been long felt. The first to fairly fulfill this desideratum was Westiln, who first constructed a serviceable binocular loupe. The one before you, taken from the ophthalmic examination room of Cooper Medical College, consists of two horizontal loupes, in reality small Galilean telescopes, opera glasses, arranged for short distances. The two separate images secured for the two eyes are fused stereoscopically. The two great drawbacks of the apparatus are: 1. That the tubes, at least in this model, since improved upon I understand in this respect, cannot be adjusted to different pupillary distances. 2. That the illumination obtained by the lamp and a number of convex lenses and mirrors is complicated and hardly sufficient. Still this instrument has been used extensively in European clinics. It yields an enlargement of about 3 to 5 diameters and a fair stereoscopic effect, but is cumbersome. I was dissatisfied with the instrument from the very beginning, and when visiting Zeiss' famous optical institute in Jena four years ago I suggested to Dr. Ozapsky, one of its scientific heads, the construction of a binocular loupe with electric illumination for examination of the eye. This is the only merit I claim in the matter, for the construction part was all done by the Jena scientists. The first instrument made then, I brought with me and demonstrated before the San Francisco Society of Eye, Ear and Throat Surgeons. This instrument before you is much improved in its mechanical parts, though the optical principle is the same as in the first model. It consists of two complete microscopic tubes in which by a system of prisms the picture is righted. By the eccentrical movement the oculars can be adjusted, and this is a matter of great importance to any pupillary distance of the observer's eyes. To procure binocular plastic vision a complete miscroscope is used for each eye, whereas in former constructions of a similar kind, only one objective was used and the bundles of rays were by mirrors and prisms conveyed into separate oculars; consequently in the instrument before you, the quality of the picture is much improved, the stereoscopic effect is more complete, and the visual field is enlarged. Not only adjustment to different pupillary distances but also optical adjustment for each eye is possible. The enlargement varies from 9 to 63 diameters. One of the finest features of this instrument is its illumination tube. It contains an electric lamp and concentrating lenses, and as it lies directly over and is connected with the two microscope tubes, the focusing on and the illumination of the object, we desire to examine, are accomplished in one stroke—that is, once focused, the eye field *must* be well illuminated. The mechanism of the instrument is perfect, its use is easy, the plastic binocular vision afforded by it is remarkable. We see any irregularity on the surface of the cornea the course of the finest blood vessels on and in it; how deeply a foreign body is imbedded in its tissue; the contents of the anterior chamber; the extent to which a tubercle or gumma encroach upon it; the lens, anterior part of the vitreos; and yet the mean distance of the eye examined from the objectives of the instrument is from 40 to 50 millimeters. The instrument has been used by me for fully three years, affording ever renewed pleasure and in a number of cases proving quite useful. In the case of a young girl, suspected of suffering from glioma the surface of the fundus was clearly recognized to be of an uneven gliomatous nature with newly formed blood vessels. In two cases foreign bodies were detected by the instrument, that had escaped the usual methods of examinations: one was a very small sharp spicula of stone, which having perforated the cornea nestled against and in the gray iris and once recognized was successfully extracted by the attending surgeon. In the other case referred to me for an opinion as to the presence of a metallic body in the eye, the instru-



A—Prisms. B—Illuminating Tube. C—Oculars.
K—Rest for Patient's Head. 5—Objectives.

ment readily after thorough dilatation of the pupil revealed the position of a very small bit of iron in the extreme periphery of the lens near its equatorial edge. This one, located by the binocular microscope, was subsequently removed with the magnet by the attending oculist.

The usefulness of the binocular corneal microscope ceases when the perforating foreign body produces intraocular hemorrhage or traumatic cataract and the opaque refracting media hide it from view, or when it has become imbedded in the coatings of the eye or is lodged in the orbital cavity. These conditions have led to experimentation in the direction of discovering the presence of metallic foreign bodies in the eye, the result of which in its most perfected and practical form is the Asmus sideroscope or iron-finder as simplified by Hirschberg. In this as in the original instrument demonstrated in conjunction with the giant electro magnet before the members of this society a few years ago, a sensitive magnetic needly is suspended from a cocoon thread within a glass box. To the middle of the needle and moving with it is fixed a small plane mirror. But whilst in the old instrument a terrestrial telescope had to be used to observe the motion of the scale within the mirror, the whole arrangement of the apparatus being cumbersome, the illumination complicated, the needle a long time in returning to rest; in the instrument before us the magnet needle although being quite powerful quickly returns to its position of rest, a deviation of 2° to 3° indicates the presence of a metallic foreign body within the eye, the lamp is effective and the whole apparatus can be made ready for use in a few minutes. Having given up the use of the old sideroscope for some little time I was very glad to try this new model on a case Thursday evening last. The patient's right eye was struck by a small fragment from a steel hammer. Sight was immediately lost. On my seeing the patient three days later I found an ugly crescent-like perforating corneal wound, shallow anterior chamber, pupillary edge of iris fringed with blood, traumatic cataract, tension hardly at all diminished, field of vision normal, quantitative perception of light, no pain, except on pressure, slight lacchrymation and photophobia. There was no foreign body visible although the presumption was strong that it had penetrated and was lodged in or behind the lens. Approaching the south end of the magnet needle to the center of the cornea about two lines distant there was no deviation of the needle observable, the black line on the screen remained quiet over the 0 mark; on looking to the right, left or downward no reaction; on looking upward prompt positive reaction, the needle deviated fully 2° to 3°, the lower half of the eyeball with the metallic foreign body in it having been brought under the influence of the needle. The corneal wound now being somewhat enlarged the patient's eye was approached to the giant magnet and almost instantaneously upon the closure of the circuit the small sharp chip of metal was successfully extracted through the original corneal wound. Some experiments were made in conjunction with Messrs. Snow and Peck to ascertain how the magnet needle reacts to metallic foreign bodies in different parts of the eye. The conclusion was reached, not by any means a definite one for the trials are not concluded yet, that metallic splinters resembling in size and shape those which are liable to hit, placed in the anterior chamber of sheeps eyes, in or immediately behind the lens, if not too small in size, will cause a deflection of the magnet needle, which helps to locate approximately the foreign body. This is what happened in the case mentioned. Whether foreign bodies located deeply in the vitreous will influence the magnet needle we must find out by further experimentation, especially on the living subject. With regard to the third part of our topic I beg leave to refer to an article published by me in Knapp's Archives of Ophthalmology of 1899 entitled "A Further Contribution to the Extraction of Steel or Iron." Amongst the seven cases reported at length there are a few where the presence of a foreign body could not be ascertained by ordinary means of examination, and where the giant magnet itself was employed as an iron finder satisfactorily. If, on exposing the eye to the magnet, sharp pain was experienced, that eye invariably contained metallic foreign body which was subsequently extracted; as we might put it, "pain reaction was positive." Per contra in several other cases where clinically the presence of a metallic body was strongly suspected, repeated magnetic tractions with Haab's powerful instrument failed to produce reaction. "Pain reaction negative." In quite a number of cases this pain reaction, either positive or negative, has never disappointed me. The conclusion I came to in the above mentioned article "that Haab's magnet is a valuable sideroscope" in addition to being a powerful and generally successful extractor of metallic foreign bodies from the eye stands true, subject probably to the one very rare exception where the metallic splinter has become firmly wedged in the coatings of the eye or, having passed through these, has become wedged in the orbit.

If with the help of the binocular corneal, or better, the ocular microscope, applicable to foreign bodies of all kinds, with the assistance of the new sideroscope, or of Haab's giant magnet applicable diagnostically as searchers for metallic foreign bodies only, and generally only in the eye and not in the orbit, we have not succeeded in locating a foreign body, there remains the very valuable method of localization of small foreign bodies by means of the Roentgen Rays. The literature on this topic is very good; and excellent work has been done before in this county, on our coast by Dr. Kibbe in Seattle, by Dr. Sweet in Philadelphia, and possibly also in this city. For the purpose of this paper, however, only parts of this topic can be touched, and the following lines are from the pen of Dr. Rixford who as a surgeon has become greatly interested in this matter.

In the localization of small foreign bodies by means of the Roentgen Rays, accuracy can only be secured by the production of sharp shadows from which to make measurements. The ordinary X-Ray tube as supplied in the market is quite inadequate for nice work, it having the fault of giving not a single pencil of rays, but a more or less diffused light simply because the origin of the light is a surface of considerable size. This gives shadows more or less blurred. Of such small bits of metal as ordinarily are sought for in the eye, such a tube will give no shadow at all. The Roentgen Rays travel in straight lines as do light rays, but unlike the latter, are not refractile hence cannot be focused by any known lens mechanism. If, however the rays can be made to originate from a single point a perfect pencil of rays will be produced and this will make sharp shadows just as accurately as optic light focused by a lens will produce a sharp image. Dr. Mackenzie Davidson, an ophthalmologist of London, reasoning in this way, has succeeded by experiment in making an X-Ray tube which beautifully fulfills these conditions.

In the Crooke's tube X-Rays are produced at the points where the stream of cathode rays impinge on the metallic anti-cathode. If the anti-cathode be placed in the narrowest point of the cathode stream, which in most tubes with the concave cathode is less than 1-16 of an inch in diameter, the area giving forth X-Rays will be approximately 1-16 inch or less in diameter, for all practical purposes, a point. A practical difficulty however arose in that concentration of electrical activity at this point developed so great a degree of heat that platinum of which such anti-cathodes are usually made was melted. Dr. Davidson tried iridium, which gave much better results, but with high currents even that fused. He therefore used osmium which was found to withstand an enormous current without melting and which perhaps from its high atomic weight certainly gives a more penetrating pencil of rays than platinum.

Given the focal tube with osmium anti-cathode, Davidson's method of localization of foreign bodies in the eye is simple. The patient's head is fixed in a suitable frame, the photographic plate wrapped in black paper is held in a certain fixed position, the X-Ray tube is placed in a definite relation to the plate. Two exposures are made on two different plates with the tube in two different positions in the same plane. A piece of lead wire is fastened to the skin of the eyelid by a piece of adhesive plaster for the purpose of furnishing a known point from which to make the measurements of localization. From the two photographs thus obtained, knowing the distance of the tubes from the plate and the relative positions, data are furnished from which by a simple process of triangulation, the distance of the foreign body from the known point, the bit of metal on the lower eyelid can be accurately measured. Davidson has in this way succeeded in locating a minute bit of brass in the ciliary body, accurately, to within 1-50 of an inch. The two photographs being taken from two different points say six c. m. apart are stereoscopically related and if then the one could be seen by the right eye alone and the other by the left eye alone and these two images made to coincide, an actual stereoscopic picture would result. Davidson has succeeded in this admirably by means of the Wheatstone stereoscope, the predecessor of the Brewster instrument, which in brief consists of two mirrors placed at right angles with each other with adjoining edges in front of the observer's nose, the photographs being held up at the sides, the right eye will see one picture the left eye the other and with most beautiful plastic effect, by which the skull stands out in all its three dimensions and the foreign body is seen to be suspended in its actual relations with the surrounding bony parts.

Dr. Rixford made radiographs of the two cases of shotgun injury which are presented to you now. The first a young man from Watsonville. A very small shot pierced the upper lid and had passed into the orbit bruising the eyeball, which showed hemorrhages into and under the retina. Slight oblation of the retina and possibly choroideal rupture. The media were clear and no shot was visible in the eye or any trace of one having passed through it. Vision had become almost nil, but recovered while under my observation to 20-50. Radiograph shows location of one and possibly two outside of eye and in rear of orbit.

The notes of the second case are kindly given by Dr. Briggs:

Mr. W. S. R. while gunning January 1st was accidentally shot by a friend with a No. 7 bird shot. The left side of the body, left arm, and left side of the face were peppered with shot. One or more thought to have entered the eye, there being one perceptible wound through the upper lid going inward, and towards the nasal side through the external border of the sclero-corneal junction. The anterior chamber filled with blood, no perception light. January 26th, after treatment: atropine, hot boracic acid lotion, quiet; eye less sensitive, anterior chamber clear, lens opaque, no view of fundus. February: Referred to Dr. Barkan for opinion, enucleation having been advised. X-Ray; Radiograph. February 17th, eye removed; sent to Dr. Barkan. April 15th, has comfort with artificial eye. Shot was localized by Dr. Rixford as just outside of the eye in the orbit. Section of the eye revealed the correctness of the localization of the shot, there being none found in the eyeball, which showed extensive perforative lesions, retinal detachments, hemorrhages, etc.

To sum up: 1. The electric binocular microscope furnishes for examination purposes, plastic vision, the best of illumination, is easily handled and adjusted in every way, and of great value in ferretting out the course and location of foreign bodies of all kinds in the eye. 2. The perfected sideroscope (Hirschberg) is a useful iron finder for metallic foreign bodies in the front half of the eye, and may prove useful for those situated more deeply. 3. In doubtful cases of presence of metallic foreign bodies within the eye even if the sideroscope gives negative result, Haab's electro magnet by its powerful action, which extends readily also through the deeper parts of the eye, may still find and attract the foreign body and show the characteristic pain reaction. This pain reaction is due to the foreign body retracing its course out of the eye and coming in contact with sensitive parts of the eye. In 16 operations by me with Haab's magnet, pain was experienced each time. In the absence of pain reaction with the use of the giant magnet the conclusion arrived at with a great degree of probability is that the eye does not contain a particle of steel or iron, a diagnostic means of great value in properly shaping treatments in these serious and responsible cases. 4. Foreign bodies of all kinds, steel, iron, copper, lead, glass, wood, etc., may be recognized and located by the Roentgen Rays, and plastically seen by Dr. Davidson's method of radiography and stereoscopic examination.

Occidental Medical Times

Communications are invited from all parts of the world. When necessary to elucidate the text, illustrations will be furnished without cost to the author. Published monthly.

Office of Publication, : : : 1121 Sutter Street, San Francisco.

SAN FRANCISCO, JUNE, 1900.

THE PLAGUE.

The proofs offered by the Board of Health are amply sufficient to convince any sane and reasonable person of the existence of the plague in our city. The first case was reported March 6th; second, March 15th; third, March 17th; fourth, March 18th; fifth, April 24th; sixth and seventh, May 11th; eighth, May 13th; ninth, May 14th; tenth, May 29th; eleventh, June 3d.

A quarantine was established over the Chinese quarter on March 6th and was raised on March 9th. From this date to the 18th of May the Board of Health continued its close and careful inspection, and reported the cases as narrated above. At first, full publicity was given to their reports, but under the relentless pressure of the press and the various business organizations they were forced to conceal the real condition of affairs, and give an unwarranted acquiescence to the lies and villainous abuse hurled upon them. After many consultations with the business community, the press, and the municipal authorities, and having failed in securing the faintest semblance of assistance, they finally appealed to the National Government for aid if necessary to suppress the disease. With this assurance in sheer desperation on the 18th of May, the following resolution was adopted:

"Resolved, that it is the sense of this Board that bubonic plague exists in the City and County of San Francisco, and that all necessary steps already taken for the prevention of its spread be continued, together with such additional measures as may be required."

On May 21st the State Board of Health issued the following:

"To the State Boards of Health of the United States:

Reports outside of this State of the existence of bubonic plague here (San Francisco) have been grossly exaggerated. The State Board of Health of California has carefully inquired into the facts and officially reported them to you. * * * All the cases were Chinese, found dead in their unsanitary quarters known as Chinatown. That they died of bubonic plague was established by the bacteriological investigation of the City Board of Health, confirmed by Dr. Kinyoun, the United States Quarantine Officer of the Port of San Francisco. At this time there are no known cases of bubonic plague in California." * * * Finally, "We deplore the attitude of the San Francisco press toward your Board by continuously disapproving of your work, even informing the public that your official life was dishonest and that your declarations as to the presence of the plague in San Francisco were false. This attitude of the press toward you was undoubtedly politically malicious and would have been a hindrance to your suppressing the plague if it had reached any magnitude." On the same day Surgeon General Wyman sent the following orders to Surgeon Kinyoun:

"During the existence of plague at any point in the United States, the Surgeon General, Marine Hospital Service, is authorized to forbid the sale or donation of transportation by common carriers to Asiatics or other races liable to the disease.

"No common carrier shall accept for transportation any person suffering with plague or any articles infected therewith, nor shall common carriers accept for transportation any class of persons who may be designated by the Surgeon General of the Marine Hospital Service, as being likely to convey the risk of plague contagion to other communities, and said common carriers shall be subject to inspection. Inform transportation companies and direct them under above regulations to refuse transportation to Asiatics except on your certificate, and instruct bonded inspectors to inspect trains and prevent Asiatics leaving State without your certificate.

(Signed) WYMAN.
Surgeon General, Marine Hospital Service.

The passage of these resolutions and the order from Surgeon General Wyman seemed to complete the authority for a full quarantine of the State, which was at once put into effect. In the meantime the Six Companies, and the entire business community were straining every effort to enjoin the State and local authorities to remove the injunction placed upon the Chinese and Japanese. Especial emphasis was laid upon the inoculation, demanded by the quarantine, so that on the 25th of May the United States Federal Court was asked to intervene. The question at issue was not as has been erroneously stated the existence or non-existence of the plague, but as to the power of the State to legislate against one class over another, equally exposed possibly to the infection said to exist. In his decision Judge Morrow held that the Board of Health had no power to issue the instructions regarding the inoculation, as the Board of Supervisors had not passed any legislation on the matter, as provided by the charter of this city and county, and that the action of the Board of Health is discriminatory, as it only applies to Asiatics. "These regulations appear to be without legislative authority, but assuming that they have the sanction of a general authority under the resolution of the Board of Health of May 18, 1900, still they cannot be sustained. They are not based upon established distinction in the conditions that are supposed to attend this plague, or the persons exposed to its contagion, but they are bodily directed against the Asiatic or Mongolian race as a class without regard to the previous condition, habits, exposure to disease or residence of the individual; and the only justification offered for this discrimination was a suggestion made by counsel for the defendants in the course of the argument that this particular race is more liable to the plague than any other."

The injunction was thus removed. A meeting of the State Board of Health was held at once and steps taken to legalize a quarantine by asking the Supervisors to act as the Court had instructed. This power was granted with one dissenting vote, and Chinatown was promptly quarantined and will remain so for an indefinite period. The Boards of Health of Sacramento, Stockton, San Jose, and other cities have adopted resolutions unanimously commending the action of our local Board, and have instituted means of inspection and protection for their respective cities. Several states have also quarantined against Asiatics coming from California.

The evidence of the bacteriologic, pathologic, and post mortem examinations of the eleven cases reported has proven beyond all doubt that these

Chinamen died of genuine Asiatic plague. The work of the local Board has been confirmed in every step by Surgeon Kinyoun and finally by Dr. George F. Shrady of New York.

Our local Board deserves the highest praise for the efficiency of its work with its most limited means against terrible odds, but two serious errors have been made: one in raising the first quarantine; the other in being coerced to suppress the truth.

The report of the State Board is stultifying to that body. It says that the investigations of the local Board positively prove the existence of the disease, but declared that no case existed at this time; yet on the 29th of May and the 3d of June two indisputable cases were found. Had they used their authority and been as zealous in discovering a case as they were in their blundering attempt to hide the truth they would possibly have been more pleased with their Delphian report. The Board knew or should have known that if seven cases existed the bacillus, the cause of the disease, existed then and now. Moreover that body should remember that the plague is not alone confined to San Francisco; for one, a most typical case, came here on a Sacramento River boat on the 23d and died on the 24th of April.

Strikingly characteristic of the logical action of our people was the report of a meeting of our Supervisors, when immediately preceding the meeting many were pronounced in their opinion that no plague existed, yet with one consistent dissentor the authority to quarantine the Chinese quarter was promptly passed.

The most powerful opposition offered has come from commercial bodies, the Board of Trade, Shippers' Association, Fruit Growers' and especially the Merchants' Association. This latter body has hitherto enjoyed the full confidence and esteem of every one and was supposed to stand out and above the rabble for right, but in this instance coercion and deception have been their password. So strong has been their opposition that the very existence of the Board has been at stake, and these people not content with interviews denying the truth, but bolstered up by an unscrupulous press, after having been most plainly told of the existence of the plague, its dangers and possibilities by both National, State and local authorities, have circularized the State with a lie so weak as to be even unbecoming the newspapers. They were not content with prostituting their own honor and integrity, but forced the local Board to conceal the facts and endeavored to do the same thing with the National Government.

In the April issue of the OCCIDENTAL MEDICAL TIMES we endeavored to do justice to the daily press, the most villainous and unscrupulous purveyors of news on the globe. They, too, have been informed of every step in the investigations and of the truth of each case; yet in flaming headlines and editorials they denied that the disease ever existed or exists. It is not necessary to review the contradictions, the lies and nonsense that has filled their disreputable pages, and all on account of a disgruntled, political faction. Finally, that the truth might be known, the New York Herald and the Call brought Dr. Geo. F. Shrady, an expert here to pass judgment in the matter. Dr. Shrady would have done better if, as is stated in an interview, he preferred to return to New York and discuss the subject at long range. We were at first loath to believe that the printed interviews were true or could come from a physician. Contradictions, illogical conclusions and most glaring inconsistencies are imputed to him, filling our hearts with sympathy that so learned and distinguished a man should have fallen a prey to such unscrupulous tricksters. If Dr. Shrady was so infrequently unable to find a single case of illness of any character in Chinatown, how does he account for the cases dying on May the 29th and June 3d?

The public, the ministers, etc., have continued to deny the truth without any knowledge of the facts, following blindly the misinformation daily given forth by the papers. The marked prominence recently of certain physicians is deplorable, their acts are unbecoming their profession and will not redound to their glory or advancement.

So much falsehood has been published, teeming with maliciousness and open charges of dishonesty, that if the honor of the profession were not at stake we would urge that all the barriers be removed and the disease be allowed full sway in order that the people might reap a reward they well deserve. But it is well to remind all these various organizations, bodies of men, collectively and individually, doctors, ministers, papers, weekly and daily, that the truth will prevail always; that honesty is the best policy in any line of life; that through ignorance or greed for money they have committed a crime in forcing the Board of Health to raise the first quarantine; that if they have no regard for the safety of their own families and fellow citizens they are directly responsible to the people of the neighboring States and the United States for the spread of this disease; and that if they will not do their duty towards their own State the National Government, as it has done before, will protect her people from a false, selfish, base policy that has dominated our citizens in this disgraceful affair.

NOTES.

ANTI-VIVISECTION.

The following letters, published through the courtesy of Dr. L. C. Lane, show clearly that personal effort can be of very great service in preventing pernicious efforts to become active agents against the cause of science. We have frequently, in plain terms, denounced the movement of that deluded sect, the anti-vivesectionists. If concerted action is taken by the profession the bill will meet its annihilation when called up again. This very praiseworthy effort of Dr. Lane should be repeated by every reputable physician on the Coast:

United States Senate,
Washington, D. C., April 16, 1900.

L. C. Lane, M. D., San Francisco, California.

My dear Doctor:—I am in receipt of yours of the 9th inst., and will, as you request, give my careful attention to the anti-vivisection bill. But I do not believe that it will be possible to place such a stumbling block in the way of science as is proposed.

Yours very truly,

GEO. C. PERKINS.

United States Senate,
Washington, D. C., April 17, 1900.

L. C. Lane, M. D., San Francisco, Cal.

Dear Sir:—Yours of the 9th inst., opposing the Gallinger Bill against vivisection, received. When this matter reaches the Senate, I will give it my careful attention. Much obliged for your opinion.

Yours truly,

THOMAS R. BARD.

SOCIETY PROCEEDINGS.

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting May, 1900.

Dr. E. E. Kelly, presided.

TREATMENT OF CROSS EYES.

Dr. Vard H. Hulen read a paper on, "The Proper Time to Begin the Treatment of Cross Eyes."

BRIGHTS DISEASE WITH PATHOLOGICAL SPECIMENS.

Dr. L. L. Dorr briefly reported this case as follows: "I have been acquainted with four generations of this family, and have an intimate knowledge of the deceased and his characteristics, cared for him in life and made the autopsy. Patient's father had rheumatic history, and died from apoplexy; his mother died at 73 from some unknown cause; one sister died at 19 from secondary hemorrhage following operation for abdominal tumor; one brother died at 50, cause unknown; another brother living and well at 53; another sister living at 60, having a history of uric acid headaches, and has suffered from a pyonephrosis completely destroying the functions of that organ. Patient, 61, bachelor, bank employee, resident of San Francisco all the time, taking only short vacations during the summer; suffered from uric acid headaches, with no relief from all remedies prescribed or suggested, hearty eater, moderate drinker, committed no excesses. Had no serious disease till his last one. In October suffered from supposed ptomaine poisoning after eating fish, recovered in four days; following this attack began to be troubled with insomnia, on which bromides and sulfonal, etc., had little effect; about this time he was seen by two other physicians who found nothing radically wrong after careful examination. The writer urged exercise, etc., but he went to some one, who was giving special attention to the stomach, and at this time a diagnosis of enlargement of the heart, and Bright's disease with unfavorable prognosis was made. Patient was suffering from edema of the lungs, was expectorating blood frequently, had 3 per cent albumen by volume in urine, was passing only 30 ounces per day, edema of the ankles had begun, labored respiration. Albumen increased to 10 per cent by volume, granular casts were found, not in abundance, edema was so marked that punctures had to be made in the legs to permit of drainage. Treatment was varied as the symptoms demanded, from nitroglycerine and whiskey to potassium iodid, and later digitalis. Later edema of the legs became more marked, sleeplessness was a distressing symptom, so much so that morphin had to be administered at night, his mind became confused and about three days before the end Cheyne-Stokes respiration began and continued till death, which occurred suddenly from dilatation of the heart. On autopsy, heart enlarged, both ventricles filled with dark blood clot, substance of heart softened, no valvular lesions; liver slightly enlarged and granular on its surface; only one kidney was present, the right, greatly increased in size. The heart measured 6 inches in length, five in width, and three in thickness, weighing 21 ounces. The kidney was 5¼ inches long, 2½ inches wide, and 1½ inches thick and weighs 7 ounces. This case shows the insidious character of chronic nephritis, and that the presence or absence of albumen is not certain evidence of disease. From the statistics of the Health Board the writer shows that nephritis, all forms, has increased from 1 per cent of total mortality in 1866 to 5 per cent in 1898, and he attributes this increase in part at least to careful autopsy work; and he further shows that nephritis and carcinoma both have increased steadily in these years while other diseases have varied."

Dr. A. W. Perry: "I saw this case in December, when he was referred to me as having some stomach trouble. I examined the stomach contents after a test meal and found the organ in fair condition. There was no free hydrochloric acid, but the contents of the stomach showed that some hydrochloric acid must have been present to digest the albuminoids. From his hard pulse with the nocturnal dyspnea I concluded that he had granular kidneys. I examined his urine every week and on about the fourth examination I found albumen. Three days later I found edema of the lung. He expectorated a large quantity of yellow serum. He developed marked dropsy and died two months later."

Dr. D. W. Montgomery: "I had the pleasure of seeing this case. He came to me in December, 1895, and was then about 57 years of age. He was large, fleshy, pale and pasty looking, weighing 186 pounds. He had had chills and fever in Washington at 15, and had suffered with headaches through the eyes for years. He had a good appetite and his bowels were regular. He came to me suffering from furuncles on the back of the neck. He slept well. His pulse was 99. I do not remember about the tension of the artery, but I did note that the aortic click was accentuated. The heart sounds were otherwise normal. The urine was clear, acid, and had a specific gravity of 1016. It gave albumen with heat and acetic acid and with nitric acid. He said that he had passed albumen about five months previously. In attempting to reduce his weight he had cut down the amount of liquids, and to this was attributed the attack of foruncles. I could not say then and did not say that he was suffering from Bright's disease. I told him that I did not think that his urine was good. I told him to recommence drinking a great deal of water and gave him a diuretic. I gave him five per cent resorcin paste which did not cut much figure in the therapeutics. The furuncles disappeared. Since that time I saw him several times, and he seemed to be a hypochondriac. The question here is of Bright's disease with albumen only at intervals. I caught him at a time when he had albumen in his urine and the reason that I found it was probably because of the unusually concentrated condition of his urine. He probably had more irritation because of its concentration. Bright's disease without albuminuria is not very rare. I remember a case a number of years ago having a great deal of albumen. He lived an invalid life in the house. For one year it disappeared. He had a great deal of work to do at one time and the albuminuria and headaches came on every week. The albumen was only small in amount and the amount of urine was always greater than normal. Arterial tension was always very high. His heart was very large. He died of endocarditis and almost to the last there was no albumen and no casts could be found. I have no doubt that there was a granular contracted kidney in that case. The patient had nocturnal dyspnea for ten years previous to death."

THERAPY OF GONORRHEA.

Dr. John C. Spencer read a paper on, "The Therapy of Gonorrhea." [To be published.]

Dr. M. Krotoszyner: "The value of the paper lies mostly upon the reports of personal experience. If the Doctor has had really good results from those methods that he has used I think that he is justified in reporting them. I for my part treat those acute cases differently. For acute gonorrheas lately there have been very many remedies suggested. I am rather astonished to learn that Dr. Spencer did not have good results with the Janet method. Any case of acute urethritis of gonorrheal nature cannot be cured before six or eight weeks have passed. I think that we will have to begin a crusade against gonorrhea just as much as against tuberculosis. In the East there is already an organization of urinary specialists and general physicians taking this question into serious consideration. Largin has about two per cent more of the organic silver than protargol. It gives quicker results. I used protargol in much stronger solutions. I start with 1 per cent solutions and go up to 5 per cent."

Dr. Spencer: "The use of largin I am not familiar with experimentally. As regards the strengths of the solutions used, of course presumably the stronger the strength of the bacterioidal solution the quicker we will destroy the bacteria. My own belief is the less we irritate the urethra in destroying the bacteria the more rational is our treatment."

Regular Meeting, April, 1900.

The President, Dr. E. E. Kelly, presided.

BUBONIC PLAGUE.

Dr. H. A. L. Ryfkogel read a paper on, "The Bubonic Plague." With regard to the recent case in this city he remarked:

"Through the courtesy of Dr. Kellogg, a couple of weeks after the first examination, I obtained a culture from the glands of the suspected case. I transferred it, obtaining a culture of the fourth generation. On April first I inoculated a guinea pig which died sixty hours later, giving the typical appearance of the plague septicemia. There was congestion of the meninges, pneumonic areas in the lungs and typical involvement of the intestines. The organs here in this bottle show well the appearance. The bacillus was found in the blood and in smears from all the organs. They were especially numerous in the spleen. I have two slides here, one from Kitasato, of the Hongkong epidemic in 1894, from the blood of a man, and the other from the blood of the guinea pig that I inoculated. In both of them you will see the large blood cells and an oval bacillus staining at each end and clear in the center. With the cultural experiments and the changes found post mortem and the appearance of the bacilli, the evidence is conclusive, the cultures were taken from the spleen of the guinea pig which died. Here are two bouillon cultures, one taken from a case in Bombay, and by shaking it up you can see the typical flocculi; and the other one is from the spleen of the guinea pig, showing the same typical flocculi on shaking. Of course it leaves absolutely no doubt as to the nature of the case in Chinatown. According to many pseudobacteriologists the first symptom of the occurrence of the plague should be an increase in the death rate. This is not so; the first symptoms in a community are, several deaths occurring from causes not exactly understood. The insidious invasion of the disease is typical of every epidemic. This was the only case; the very vigorous action of the Board of Health of San Francisco stamped out the disease."

Dr. W. H. Kellogg read a paper entitled, "The Bubonic Plague in San Francisco."

Dr. D. W. Montgomery: "I am pleased to say that the experiments have been continued, that animals have been inoculated from cultures of the bacillus from the Chinaman, and that these animals in their turn have died of the plague. From the Sunday night following the beginning of the experimentation there was no doubt that that was the plague. Curiously enough there was absolute disbelief and positive negation by men who had not examined the case at all. The members of the Board of Health, Dr. Kellogg, Dr. Kinyoun, Dr. Ophuls, Dr Ryfkogel and I knew that that was the plague. I heard again and again, and lamentably, sometimes through the press and sometimes from doctors, that that was not the plague, and these doctors had not troubled themselves in the least to find out any facts except very probably from the "Chronicle." That the laity would be against the diagnosis is human nature. The history of epidemics of the plague is that the laity do not believe that it is the plague until a great many deaths occur. The press, although fully assured that it was the plague and knowing that it was, would still be inclined to deny it for commercial reasons. I do not know that the press strove to find out the facts in this case; they simply denied that, it was the plague. The 'newspaper doctors' came out quite decidedly that it was not the plague. It was a fair chance for advertising, and it did not require any particular sweat or expenditure of energy to deny it. It turns out that it is the plague and it has been proven in every known way, and I do not know what those gentlemen are going to do about it. I suppose that they will keep quiet and let it go over until the next epidemic and then assert themselves again just as they have in this case. The doctors of the Board of Health are to be congratulated on not appearing in the newspapers to any extent. They simply went about their work and did it as effectively as it could be done with the small amount of money that was at their command."

Dr. Rosenstirn: "I am not one of the 'newspaper doctors' who denied the plague. A few nights ago I had a discussion with Dr. Montgomery about the plague. Upon inquiry whether pure cultures had been used to prove absolutely the virulence of the bacilli, he told me that they had not, and I told him that investigators who had not brought in this last link of circumstancial evidence had not been complete in their investigatons, and this could not be used as an absolute basis to form such an important decision on. I am glad that experiments have been made, and that the last link has been supplied. I believe, and I repeat it even now, that, before a proclamation of such great importance should be made, an irreproachable chain of evidence should be presented, and that can only be done by the inoculation of the pure culture."

Dr. Montgomery: "I did not know that these experiments had been performed. They probably had been before I had the conversation with Dr. Rosenstirn. Everything pointed toward the plague and nothing against it. The facts were important and numerous and you could not get away from them. There was enough and more to class that disease as the plague. The men who wrote in the newspapers and the preachers who preached against it did not take the trouble to investigate. A few evenings ago I met two doctors here who were as acrimoniously bitter as if they had been theologians, and with the same right that they believed that it was not the plague."

SAN FRANCISCO SOCIETY OF EYE, EAR, NOSE AND THROAT SURGEONS.

Regular Meeting, April, 1900.

The First Vice-President, Dr. F. B. Eaton, in the chair.

Dr. A. B. McKee presented a boy aged 14 whose right eye had been injured three years ago by a pair of scissors, a blade of which perforated the cornea and iris. A cyst of the iris had formed nearly filling the anterior chamber, and which had twice ruptured. This cyst appeared to be formed by a separation of the anterior and posterior layers of the iris by the fluid.

Dr. G. H. Powers thought a time might come when it would be wise to operate on the cyst.

Dr. R. D. Cohn considered it well to determine the nature of the cyst before removing it.

Dr. McKee had seen another case of puncture of the iris with accumulation of fluid. In the present case the posterior layer is united to the anterior capsule.

Dr. Eaton presented a woman aged 38 who complained of asthenopia, and of constantly seeing the right side of her nose when looking near. There is complete paralysis of the right internal and external rectus, and of the right internus, but so far no tests showed any defective motility of other muscles. There is a high grade of astigmatism in each eye, and the history indicates that the muscular trouble is congenital. He would report further after investigation.

Dr. L. C. Deane exhibited an improved Wright's nasal snare, Emold's modification of Bosworth's snare, a universal nasal saw with bevelled teeth, and Knight's adenoid forceps.

The discussion on the "Muscular Tests" demonstrated by Drs. Eaton and Hulen at the last meeting being in order, Dr. Barkan said: "I use the Maddox rod and find different conditions on examining on different days, depending upon rest, digestion, light and work. Some cases improve under gymnastic prismatic exercise, but if, after some time, the old life is taken up, the same trouble is found on reëxamination, the patient possibly not complaining any more. I am opposed to partial tenotomy. Out of door exercise helps, and horseback riding is good; also the morning cold bath, and resting the eyes for ten minutes at a time after one hour's work. Faradization of the muscles is possibly helpful. I manage to do good in some cases, and suppose that some cases go from me to others, as those of others come to me."

Dr. Deane: "The use of no one test alone is sufficient, as for instance, the Maddox rod test, I have found that different persons respond differently under the same test, in some the tendency to fusion being completely abolished, in others not, for they can overcome a two and even a three degree prism either way so as to fuse the real and blurred images. One examination is not at all sufficient, and I agree with those who say that the manifest quantity of heterophoria varies from day to day. After several examinations, a proper estimate of the manifest amount of heterophoria can be arrived at, whether the tendency to deviation is due to a weak muscle on one side, or an over-powerful one on the other. Two factors are to be considered in these tests: 1. Their mechanical nature, the measurement of muscular strength or weakness and ocular deviation of the visual axes, by exact degrees of prism strength. 2. That we are dealing with human muscular energy and reflexes, and not with an exact mathematical problem. Many nervous idiosyncrasies have to be taken into account. The diagnosis of these cases cannot be exactly explained on the basis that one muscle is too strong, or another too weak. There is a seat of nervous irritation, and that must be sought for. The combination of symptoms can be more numerous than in whist. What is needed is a correct diagnosis. There is in all such cases an error of muscular balance to be overcome. The nervous effort to accomplish this and manifests itself in the peculiar array of asthenopic symptoms, and the proper alleviation of such an effort is the proper road to a cure. Whether this may be accomplished by making a strong muscle weaker, tenotomy, or strengthening a weak muscle, prism practice or advancement, or allowing the eyes to assume their imperfect position of rest and yet allow a focus to be formed on relatively the same part of the retina, wearing of prisms, is a matter that can only be settled by a correct diagnosis. My results as to the effect of tenotomy on such cases lead me to differ with Dr. Barkan as to the value of such treatment. I have operated more than two hundred times for such conditions, and the percentage of cases where relief has been obtained has been so large that I am encouraged to continue."

Dr. A. B. McKee: "The subject of 'Muscular Anomalies of the Eye' seems to be in the condition of the decision of a certain judge who, after long and careful summing up of the evidence in a certain case, said: 'The evidence all seems to be in favor of the plaintiff, but I shall give my decision in favor of the defendant.' The majority of us seem to go on making careful tests of the muscles, but, in the end, our treatment is not very different from the old recognized methods—the prescribing of the correcting lenses, and attention to hygienic conditions. I have seen some cases of exophoria which showed marked improvement after a few days practice of convergence exercises, but so rapid was the improvement, that I have not been able to decide that the change was not due to psychic influence, or to improvement in the hygienic conditions. Some cases of esophoria have been greatly benefited by prisms, whilst others have complained of the same asthenopic symptoms while wearing the prisms. In one case of asthenopia, the condition of the muscles after operation by a careful surgeon, was apparently the same as my own, i. e., the adduction, abduction, and sursumduction measured the same as my own; but while I am free from asthenopia, the patient complained of the old symptoms."

Dr. Powers: "I do not think many cases should be operated upon. Nearly all cases are neurasthenic, dyspeptic, or anemic. All the means of diagnosis should be used."

Dr. G. P. Pond: "My experience in cases of muscular inequalites has led me to about the same conclusions as those of Dr. Barkan. I generally use all the methods at hand in measuring the amount of muscular insufficiency, and the result is a very pretty array of figures which, when practically applied, I have found do not give all I might hope for. I have found only a few cases relieved by the use of prisms, and the result of ocular gymnastics has not been very satisfactory when permanency of result is considered. I find that usually after correcting the error of refraction, if the symptoms are not relieved, the only thing left, in the majority of cases, is an operative procedure."

Dr. R. D. Cohn: "The German and Austrian schools have devoted comparatively little attention to muscular insufficiencies. A glance at any of the German text-books will convince one of this. Thanks chiefly to the American school we have arrived at a stage where we can diagnose muscular anomalies with a great degree of accuracy. There remains, however, a great deal to be accomplished as regards therapeutic results, which thus far have fallen far short of diagnostic results. As to partial tenotomy, I believe the great majority of oculists have abandoned it and I myself place no faith in it."

Dr. Deane: "All of us concede certain facts; that certain heterophorias cause asthenopia, and that prisms can sometimes relieve it. If squint can be improved by tenotomy, then by tenotomy we can get a proportional effect in heterophoria. A partial tenotomy implies a different meaning to different operators. I consider it a partial or graduated tenotomy when operating for a heterophoria, and muscular tests are used during the operation, and that it is a tenotomy when done for a heterotropia, when all the relaxation possible is to be obtained, and the tenotomy is a complete one involving the entire tendon as well as Tenon's capsule, etc. In performing a graduated tenotomy I first take the muscular balance with a Stevens' phorometer, after the use of cocain or holocain, I grasp the conjunctiva over the insertion of the tendon with Stevens' fixation forceps, and with Stevens' scissors, make a small opening in it. I then grasp Tenon's capsule and make a similar sized opening exposing the tendon. Through this I pass one blade of the scissors and the other over the tendon, between it and Tenon's capsule, and make a clip; then I test the patient with the phorometer. If enough has not been accomplished I repeat the same procedure in the opposite direction from the center opening, and keep on testing and cutting until the desired balance is obtained. After the operation the patient is given a mild antiseptic lotion and directed to go home and use the eyes as before."

Dr. Barkan: "We probably mean the same thing as regards a partial tenotomy."

Dr. McKee: "According to the dictum of the advocates of partial tenotomies, the muscle should not be cut until orthophoria is present, but it seems to be pretty well established that the effect of partial tenotomies is nil. If, on the other hand, the tenotomies are complete, as some suspect, why does not divergent strabismus show itself after such operations upon the internal rectus?"

Dr. Deane: "That depends upon the amount and extent of the tenotomy. Of course, if the check ligament and Tenon's capsule be cut completely, the effect will be greater; the number of degrees depends very much upon the strength of the antagonist of the muscle to be cut and the exact nature and degree of the heterophoria, I should say 4° to 10° on an external rectus under ordinary circumstances. All those who condemn tenotomy for heterophoria concede certain facts: 1. That imperfect muscular balance will produce asthenopia. 2. That wearing prisms relieves the asthenopia. 3. That a tenotomy for squint is often effective. If prisms can relieve by placing the eyes at rest; if an operation for squint does permanently change the angle between the visual axes, why cannot we correct a lesser degree of deviation or a tendency to such deviation, as in heterophoria, by a similar means?"

Dr. Cohn: "I will ask Dr. Deane if the cicatrization after partial tenotomy does not neutralize it? Also, what proportion of bad results he has after operation?"

Dr. Deane: "I would like to wait until the next meeting when I can present a tabulated report of thirty or forty of my cases showing the results of treatment."

Dr. V. H. Hulen: "Having noticed some errors in the published report of my demonstration, to prevent misunderstanding, I will recapitulate the tests in the order I use them. 1. Inspection of the face and skull for asymmetry, I have not found a relation necessarily existing between it and muscular inbalance. 2. Having the eyes follow a small object moved in various directions. Also fixing the object, advancing it toward the nose, noting which eye first deviates. 3. Screen test. 4. Parallax test. 5. Stevens' phorometer. 6. Maddox rod. This test is apparently more searching than the phorometer. 7. Maddox prism test. 8. Stevens' stenopaic lens. Shows the vertical and horizontal deviations simultaneously. 9. Tests for prism divergence, prism convergence and sursumvergence at 20 feet, and also at reading point. For these tests square prisms used in the adjustable trial box mounted on the arm of Stevens' phorometer are preferred to revolving prisms. 10. Field of binocular visions; steadying the head, covering one eye with a red glass and having the eyes follow at four or five feet, a candle in different parts of the field. 11. Stevens' tropometer is a useful instrument, and probably reveals some facts not otherwise discoverable. The correction of the refraction under complete mydriasis is always done, and many of the tests repeated while the patient is wearing the correcting glasses. The subject at the last meeting was the tests for 'Muscular Anomalies,' while the discussion this evening has been almost entirely on the treatment of the same. I will resist the temptation, which is great, to discuss the treatment. As Dr. Barkan says, there is much to be learned yet about muscular anomalies, hence a discusion of the tests enumerated by Dr. Eaton and myself should be profitable to every member of the society. The first difficulty is making a correct diagnosis and determining just what and where the error is. Until this is done any treatment is uncertain unscientific and probably detrimental. When we have used in all our muscle cases the various tests at our command, and have done so systematically, carefully and repeatedly, and made correct records of our findings, then we may, by coöperation, learn something practical of muscular anomalies. I exhibit to you a simple attachment for the square prism trial frame previously exhibited to the society, by which I can test, rapidly and conveniently, the muscular condition for the near point after having made the distance tests, without changing the position of the patient. The tests numbered 6, 7 and 8 may be carried out with advantage by this trial box."

Dr. Eaton: "Perhaps I should have insisted that the members confine the discussion to the subject of tests, but it has been too interesting to listen to the various views. There seems to be a persistent tendency to view the tests from the point of view of neurasthenia and to judge of their value with a patronizing, good natured scepticism. True, hasty enthusiasm and a disregard of functional neuroses has led to unnecessary clipping of muscles, but some, the most level headed, competent and conservative oculists have, in properly selected cases, corrected and operated with notable success. If the making of the tests results only in a "pretty array of figures," it is farce and waste of time. We must be able to build up from them a rational diagnosis founded on a correct knowledge of the etiology and pathology just as in any other class of abnormal conditions. I do not think I am unduly eulogistic in claiming that the classification of muscular anomalies proposed by Dr. Duane of New York is in advance of that of any other writer. The tests are not by it viewed as indicating symptoms, such as exophoria, esophoria, etc., but as indicating the etiology and physiology of the anomaly. Exophoria may indicate weakness of an internus, convergence insufficiency, divergence excess, or the two latter combined, and etiologically it may result from a lesion or abnormal insertion of the muscles a lesion of their nerve branches, the nuclei or the cerebral cortex, neurasthenia, etc. I would earnestly commend to the members the "Diagnostic Table" Dr. Duane has appended to his valuable essay; by it, the various findings of the tests can be coördinated into a definite picture of the anomaly present.

HOSPITAL NOTES.

CALIFORNIA EYE AND EAR HOSPITAL.

By Louis C. Deane, M. D., Surgeon to the Hospital, etc.

AN APPLICATION FOR NASO PHARYNGEAL CATARRH.

After the various causes of naso-pharyngeal catarrh have been removed, among which are the obstructive nasal conditions, purulent and catarrhal disease of the accessory sinuses and adenoids in the naso-pharynx, it is frequently only necessary to use a cleansing spray, and the catarrhal process present in the naso-pharynx subsides spontaneously; there are many cases, however, where the long-continued discharge into the naso-pharynx has caused a great amount of thickening, with more or less diffuse hypertrophy of the lymphoid tissue of the whole naso-pharynx which does not subside without treatment directed especially to it. I know of no application that is more effectual in this condition than a 2 or 5 per cent watery solution of chromic acid. The application should be carried well up into the naso-pharynx and carefully applied to every part. This can be repeated every third or fourth day, but should be made less frequently if the naso-pharynx becomes at all painful. Of course the general health must receive attention depending upon the conditions present in each individual case. There is one condition present however in nearly every case and that is the great tendency to catch cold on very slight exposures. The cold sponge bath every morning on rising is the best means of correcting this. It has the additonal advantage of being an excellent tonic, improving the appetite and nutition, and thus proves a great factor in bringing about the normal condition of the naso-pharynx.

Redmond Payne.

SUPRARENAL EXTRACT IN DISEASES OF THE NOSE AND THROAT.

In the February number of the Annals of Otology, Rhin., and Laryng., Dr. W. H. Bates presents an article upon the use of the suprarenal capsule in diseases of the nose and throat. His remarks are of value as coming from the discoverer of its blanching and styptic effects upon mucous membranes and also of his having used it more than 15,000 times on 2,000 cases in hospital and private practice. In less than one minute after its application to the mucous membrane of the nose or throat the parts are blanched. The extract acts equally upon inflammation from any cause but the effect is temporary, the former condition returning in about a half hour. The extract is not irritating. It has no anesthetic properties, as has been stated, but when pain s relieved it is due to the lessening of the congestion produced by the extract. A tolerance is not acquired by its daily use, neither is there a tendency to become addicted to it. The extract is not poisonous when taken internally; one case, he states, swallowed eight ounces of a 1 per cent solution without ill effects. To prepare it one part of the dried and pulverized gland of the sheep is mixed with ten parts of water. The mixture stands five minutes, and is then filtered. The filtrate contains about one per cent of the extract, and is now ready for use. The solution should be prepared fresh when needed. After three hours, at the ordinary temperature of the air, 70° F., the solution usually shows a change in color and that it has become less active. It soon becomes offensive from the growth of bacteria, and has then caused infection of the eye and nose. He has not seen any bad results from the use of fresh solutions. The dried glands keep indefinitely. It has been observed that when cocain is added to the aqueous solution its action is lessened. They can be used at the same sitting but applied separately. Dr. J. J. Abel has isolated the active principle of suprarenal, which he finds to be an alkaloid and has named it "epinephrin." Dr. Bates has used a 1 per cent solution (?) of this and finds it active and non-irritating, also with the advantage that it does not spoil in solution. In the treatment of diseases of the nose and throat, it is important to remember that the extract is an astringent, and nothing else. It does not cure any disease. Symptoms caused by congestion are relieved temporarily. Headaches from nasal occlusion and pain in swallowing from congestion of the pharynx or tonsils are benefited. The pain from some syphilitic and tubercular ulcers has been relieved by its astringent effect. The examination of the nasal chambers is facilitated by contracting hypertrophies of the turbinated bodies with the extract. For this purpose it is superior to cocain. The extract has been used as an adjuvant to cocain. Short operations in the nose, when the mucous membrane is not inflammed, are usually painless with cocain alone. But in nervous people, the nose inflamed, the parts congested after a recent operation, prolonged operations and in bloody operations, cocain does not usually secure complete anesthesia. In these cases the extract is of great service, when used with cocain. The extract has also been used as an adjuvant to the cautery. The mucous membrane is first whitened, and the hypertrophy of the turbinated body appreciably lessened or abolished by the extract. The application of the cautery is followed by greater benefit and with less reaction than when the extract is not used. The extract increases the effect of other astringents when used first to lessen the congestion of the mucous membrane. It changes a severe inflammation into a mild one at once, or abolishes the congestion altogether, so that the usual remedies for inflammation are better able to control the disease. The healing of ulcers is promoted by the wonderful power of the extract to whiten and contract granulations and lessen congestion. With its use one can operate almost bloodlessly in the nose and throat. In acute rhinitis, inflammation of tonsils, pharyngitis and laryngitis, the extract is of decided benefit in affording relief. Its styptic action is marked in nasal hemorrhage. The conclusions are: 1. The suprarenal extract is a powerful astringent without objectionable properties. 2. The solution of the extract should be prepared fresh when needed, and should not be mixed with any other substance. 3. In the treatment of diseases of the nose and throat, other remedies should be employed with the extract.

L. C. DEANE.

SUPRARENAL EXTRACT PRESERVATIVES.

To prepare suprarenal capsule several methods are here mentioned that have been suggested for the preservation of the suprarenal capsule in solution. In 1 per cent resorcin, in warm camphor water, in a saturated solution of boracic acid, in a 25 per cent glycothymoline solution.

L. C. D.

CORRESPONDENCE.

The Fifth Triennial Session of the American Association of Physicians and Surgeons has just been completed at Washington. The sessions were presided over by H. P. Bowditch of Harvard Medical College. His address was listened to by a very large audience and was particularly interesting. His subject was, the "Medical School of the Future," and he spoke of some changes which have been made in the method of study at Harvard Medical School which will be far reaching in their results. He believes that medical studies should be classified as essential or desirable, and that while all students should be required to take all the essentials, only certain students should be required to pursue all the studies in any one branch. Just as the A. B. degree of Harvard represents certain essential studies plus certain optional and elective ones and as the A. B. of Harvard does not necessarily mean the same as the A. B. of Yale so far as elective studies are concerned, so he believes that the M. D. degree should represent certain required studies pursued plus a certain amount of elective work and he believes that if students were allowed to choose a certain amount of their work they will work better and more. Concerning annual examinations, he thinks them a necessary evil, and urges that a daily record of work done during the year is of greater value in determining whether a student should be advanced. Among other changes he thinks valuable are an increase of laboratory work in chemistry, bacteriology and physiology; graded instruction progressing from elementary work in the first year to advanced work in the last; a modification of the didactic teaching making it less in amount and using it only to suggest lines of thought and as a supplement to laboratory and clinical work. The work of the individual sections of the congress was done in different halls. The sessions were well attended and the discussions spirited. We note the formation of a new section—that for "Proctology," and we hear of the proctologists and their essays. One of the most interesting parts of the congress is that relating to legislative action which the society proposes or endorses; they denounce the anti-vivisection bill as freak legislation; they urge the passage of laws allowing a licensed physician of one state to practice in another; they urge the removal of the income tax from legacies left to charitable institutions, and they endorse the creation of a department of public health to be presided over by a cabinet officer. There were many social functions connected with the congress terminating with a banquet at the Arlington Hotel.

C. E. COOPER.

Washington, May 4, 1900.

OBITUARY.

Dr. Benjamin M. Gill.

After months of illness and suffering Dr. Benjamin M. Gill passed peacefully into rest at his home in Dunsmuir, December 29, 1899. For some time before his last illness, his health had been failing gradually and it is evident that he foresaw the breakdown. Dr. Gill was a native of New York, and 59 years old at death. In 1861 he enlisted in the Tenth Pennsylvania Reserves, serving until the close of the war. He was graduated from Rush Medical College, Chicago, in 1879. For some years after, he practiced in Wisconsin, coming to the Pacific coast in 1883. In 1889 he came to Dunsmuir, where he has since resided. He was a member of the American Medical Association, California State Medical Society and California Northern District Medical Society. Broad-minded, liberal and philanthropic, he has been foremost in every movement for the good of the public since his residence in Dunsmuir. As a physician he ranked among the first in Northern California. He was proud of his profession, which he honored by an upright life as well as by conscientious, painstaking service. For a number of years he has been the local railroad physician and surgeon of the Southern Pacific Company, and has won hundreds of friends from all over the country who will learn with sincere sorrow of his death. He was a life-long student, a man of rare culture and superior attainments, yet he was unaffected and unpretentious in manner, and a welcome visitor in the humblest homes as well as those of wealth. A brave and good man has gone from among us, but his influence will live on and only eternity can measure the increase of the talents which were entrusted to his care. He leaves a widow, and several children by a former marriage.

Dr. W. H. I. O'Malley.

The death at the Presidio Hospital on Wednesday evening of Dr. William H. I. O'Malley, acting assistant surgeon of the Twelfth Infantry, cut short the honorable career of one of San Francisco's most promising native sons and a young man who had won honor and distinction in the service of his country. His death was due to an injury received while on duty in the Philippines, and although he held up for weeks afterward and remained in the saddle when he ought to have been in bed, he finally had to give up the fight. Invalided home, he returned to San Francisco on the transport Sherman, arriving here April 25th in such a weakened condition that he had to be carried ashore on a stretcher. The best medical attendance was secured for him and his robust constitution enabled him to fight off the reaper for months.

Dr. O'Malley received his first injury on the Island of Negros after he had been nine months in the trenches. He was riding to the front through a broken country to attend a call for medical assistance when an overhanging branch struck him on the left side, throwing him from his horse and leaving him stunned and terribly bruised. That was in December, when he was attached to the Eighteenth Infantry. A few weeks later, while on his way from Iloilo to Capig in a small boat a storm came on and in the pitching of the vessel he was thrown to the deck and again struck on his left side, injuring himself painfully. Although unfit for duty, surgeons were scarce, and he remained at his post until February 16th, when, while removing a bullet from a wounded man, his left arm became paralyzed. Then he applied to be relieved, but the department was so slow in acting on his request that a month passed before the relief came. During that time he remained in the field, although it was necessary for his men to lift him in and out of the saddle every day. After five days in the Iloilo Hospital he was transferred to a transport and came home. His death was due to an aneurism.

The dead soldier was the son of Austin J. O'Malley, a highly respected citizen, residing at 1114 Hyde Street, and his parents, four brothers and three sisters survive him. Dr. O'Malley was born in this city in October, 1872, and was educated in the public schools. He was graduated from the State University and from the medical department of the same institution in 1895. He was for many years a member of the National Guard. Soon after taking his degree in medicine he went to Alaska for the Alaska Packing Company, and afterward practiced in this city. In November, 1898, he became a contract surgeon and was sent to Honolulu, where he remained until about a year ago, when he was transferred to the Philippines and saw active service with the Sixth, Eighteenth and Twelfth Infantry regiments on Luzon, Panay and Negros Islands.

MEDICAL NEWS.

Licenses Granted.

5511. Lemon, Frank James, Elk Creek, Barnes Med. Coll., Missouri, April 12, 1898.
5512. Martin, Jeffrey, Anaheim, Med. Dept. State Univ. Iowa, March 1, 1876.
5513. Mason, Matthew, Corning, Miami Med. Coll., Ohio, May 3, 1898.
5514. McGrath, Michael E., San Francisco, Royal Coll. Phys. and Surg., Ontario, Canada, April 22, 1889.
5515. Smith, Reginald Knight, San Francisco, Coll. Phys. and Surg., Baltimore, Md., April 14, 1892.
5516. Sutton, Fred Roscoe, Los Angeles, Univ. Med. Coll., Kansas City, Missouri, March 23, 1898.
5517. Van Zwalunenburg, C., Riverside, Med. Dept. Univ. of Michigan, June 23, 1885.

April 3, 1900.

5518. Auld, Lucius, Buffalo, N. Y., Trinity Univ. Toronto, Canada, April 3, 1888.
5519. Bergquist, Karl. Emil, Hemming, Minn., Coll. of Phys. and Surg., Minneapolis, Minnesota.
5520. Campbell, J. Ralph. R., Redlands, Jefferson Med. Coll., Pa., April 2, 1890.
5521. Formaneek, Fred., Chicago, Rush Med. Coll., Illinois, Feb. 15, 1887.
5522. Freeman, Richard T., Tacoma, Wash., Royal Coll. of Phys. Edinburgh, Scotland, August 3, 1865.
5523. Hall, Anson Parsons, Visalia, Univ. Med. Coll., Kansas City, Mo., March 22, 1900.
5524. Harvie, William D., Santa Cruz., Queen's Univ., Kingston, Ont., Canada, April 2, 1889. Royal College of Phys. and Surg., Ont., Canada, April 7, 1888.
5525. Heitzman, Charles W., New Orleans, Med. Dept. Tulane Univ., Louisiana, May 3, 1899.
5526. Hillegass, Oakland, Faculty of Med., Paris, France, January 23, 1895.
5527. Johns, Samuel Pierson, Knob Shasta, Jefferson Med. Coll., Pa., March 12, 1873.
5528. Kempf, Alameda, Louisville Med. Coll., Ky., February 16, 1888.
5529. Kerr, William J., Highland, Univ. Med. Coll., Kansas City, Mo., March 22, 1900.
5530. Kingsbury, Charles H., Oxford, Mass., Med. Dept. Univ. Vermont, Vt., June 29, 1899.
5531. Philbrook, Edgar Brayton, Santa Barbara, Med. Dept. Willamette Univ., Oregon, March 30, 1898.
5532. Plunkett, John L., Boston, Mass., Baltimore Univ. School of Medicine, March 21, 1894.
5533. Porter, Alexander Shaw, Redlands, Univ. of Maryland, Baltimore, Md., April 8, 1889.

CHAS. C. WADSWORTH, M. D.
Secretary.